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ABSTRACT

Designed to provide a systematic means of analyzing the whole process of planning, implementation, and evaluation, these guidelines (1) suggest how national policies on user training may be related to national information policies in general, (2) suggest lines of action for the achievement of a national policy on user training, and (3) give advice on how to evaluate the program initiated as a result of the policy. Chapters discuss the concept of user education, i.e., making users aware of the value of information, both for special activities and in everyday life, and training them in finding information and organizing it for use; the strategic planning of user training programs; tactical program planning; program implementation; and program evaluation. Forty-four references are listed. (FM)

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UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

GUIDELINES FOR DEVELOPING AND IMPLEMENTING A NATIONAL PLAN FOR TRAINING AND EDUCATION IN INFORMATION USE

Prepared under contract for Unesco
by T.D. Wilson

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PREFACE

The aim of these guidelines is not to give the reader a ready-made statement of policy but to offer a systematic means of analysing the whole process of planning, implementation and evaluation. The guidelines present a framework which can be adapted to meet local needs and circumstances.

A document of this kind cannot provide answers to everyone's questions, nor can it take away the need for local analysis of problems, needs and priorities. All this and more must be done "on the ground" in the country where the problems and the opportunities for their solution exist.

It is hoped, however, that in the following pages much practical advice will be found on such things as the composition of working parties, on the factors that enter into policy development, and on methods of evaluating programmes. The hard work of putting this advice to the service of user education in any country, however, must be left to those who know what is needed and what may succeed.

A number of individuals, as well as the Ad Hoc Committee on Education and Training, Policy and Programme, have contributed to these guidelines by commenting upon an outline draft.

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PART 1

INTRODUCTION

1.1 Origins and aims of the guidelines

The need for user-education and training has been of concern to Unesco since the establishment of the UNISIST programme. The Information policy objectives (UNISIST proposals) (1) noted "three basic tasks for a national focus" in this area: basic training in the use of existing information sources, obtaining feedback from users on the results of information needs, studies, and, "involving as wide a range of users as possible in any new experimental service".

Action has followed. A guide for teachers, prepared by Evans, Rhodes and Keenan (2), was published in 1977. Seminars were held in Bangkok and Rome, in 1976, and the recommendation that these guidelines should be produced was put forward at the second of these seminars.

It was further recommended there that (3);

"(b) National policy on user education should be formulated as an integral part of the national information policy and in correlation with the national educational policy.

(c) The national policy on user education should preferably be formulated and implemented through the collaboration of the national focal point/ the UNISIST national committee, the appropriate government departments and professional associations."

Seeing user-training within the context of the development of national information systems is significant for the following reasons:

(a) the successful development of such systems depends upon an awareness within a society as a whole of the significance of access to information for the effective performance of all social roles, including that of everyday citizen. Educational activity to inculcate this awareness is essential and an appropriate role for Unesco and other international development agencies;

(b) to mount training programmes in information use before at least some components of national systems are adequately developed is to raise expectations which stand little chance of being satisfied;

(c) the effective planning of user-education programmes demands close association with national focal points, or, where these do not exist, with key agencies which, in the future, may be closely associated with national focal points; and

(d) the development of national systems with insufficient attention to user-education and training programmes to ensure that best use is made of them may result in systems which are ill-adapted to the real needs of users.

The aims of the guidelines are:

to suggest how national policies on user training may be related to national information policies in general and to national education policy;

to suggest lines of action for the achievement of a national policy on user training;

to give advice on how to evaluate the programme initiated as a result of the policy.

1.2 The planning and implementation process

The sources for the planning model upon which these guidelines are based, and which is presented in the form of a diagram in Figure 1 are three documents cited in the bibliography as (4, 5, 6).

The characteristics of the model are:

(a) the conception of the whole process, from the statement of a guiding philosophy to the monitoring of programmes as a logical series of stages;

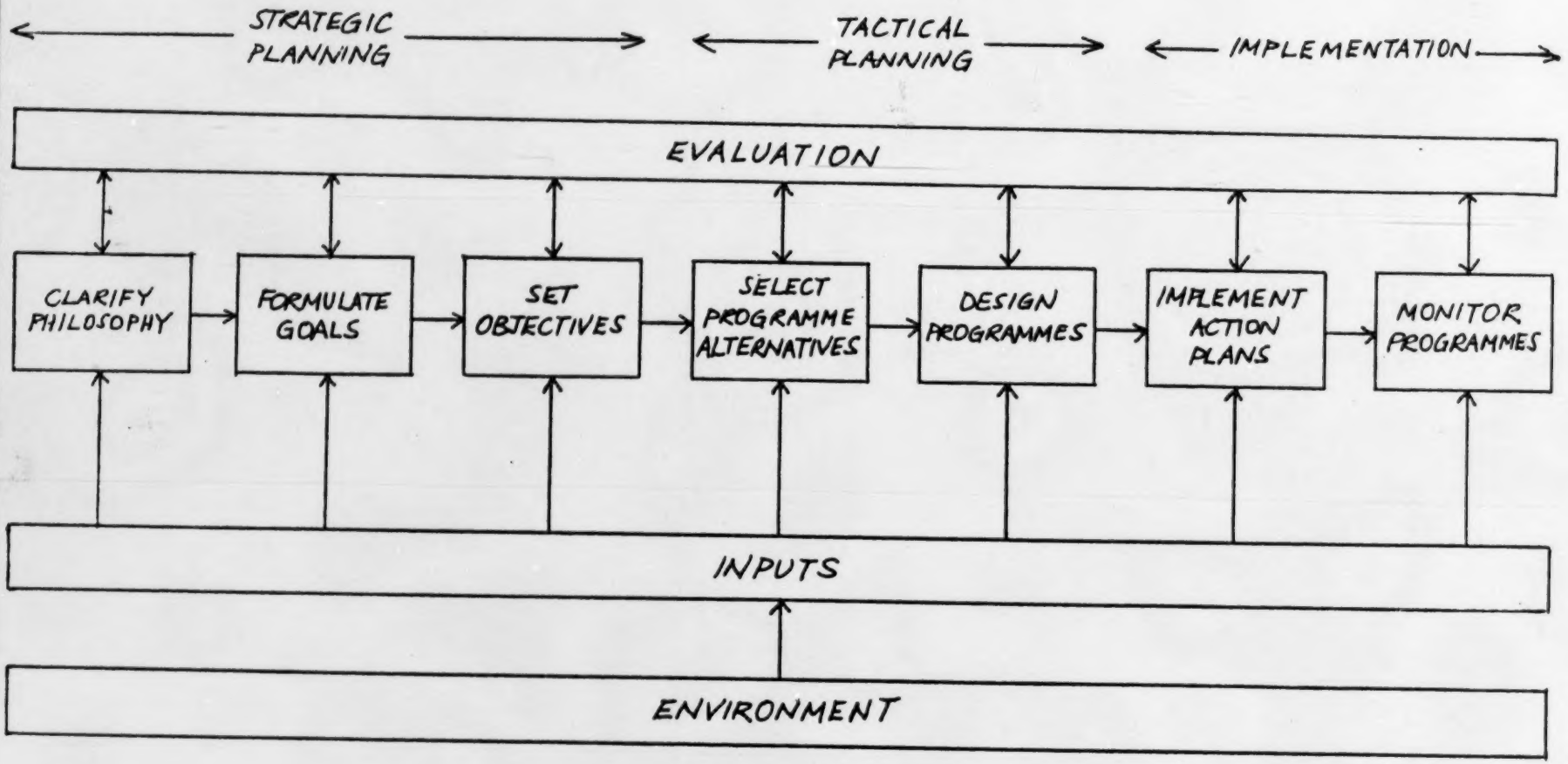
(b) these stages are: strategic planning (What do we want to do?); tactical planning (How do we want to do it?) and implementation (doing it);

(c) to carry out the total process, inputs of information on the actual situation are constantly required: information on the needs of users, on the present and potential resources of libraries and information centres; on national information policy; and

(d) evaluation is seen as a process parallel to the main planning process and inputs from evaluation procedures are also required at each stage. Planning is long term and essentially cyclical and initially, therefore, the evaluation inputs must be provided by experts from outside the planning organization; these may be partially replaced in succeeding cycles by information from the evaluation of individual programmes.

A model, however, is a statement of an ideal type: in practice it may prove necessary, as a result of shortages of funds, specialized manpower, or data, to modify the model, by paying less attention to one phase or another, by relying upon minimal inputs of information about the national situation, by reducing the amount of monitoring, or by making other decisions on the best use of available time and manpower. Whenever possible, however, an attempt should be made to pay some attention to each of the stages identified in the diagram.

Figure 1 The Planning Model



PART 2

THE CONCEPT OF USER-EDUCATION AND TRAINING

2.1 Definition

In this document "education" is assumed to be concerned with instilling values, attitudes and motivation, whereas "training" is taken to be concerned with teaching skills. Thus:

2.1.1 user-education is the process whereby potential users of information, or those concerned with the creation of national information policies, are made aware of the value of information in specialized fields of activity and in everyday life, are instilled with positive attitudes towards the need to seek information, and are motivated to use or develop information resources; and

2.1.2 user-training is the process whereby potential or present users of information are given the skills of discovering relevant information resources, searching those sources, and organizing the information for use.

Some countries, or some sectors within a country may be in greater need of user-education than of user-training. The idea of training in information-searching skills may be premature where the basic information infrastructure is lacking. Such countries, or sectors, require user-education programmes to convey the value of information resources.

2.2 The purposes of user-education and training

This section discusses: the role of user-education in increasing the awareness of key groups in national planning and development; the role of education and training in information use at different levels of education; its value for scientific and technological research; the idea of "fields of practice" as embracing all remaining occupational groups; and finally, the role of education and training in relation to the lay citizen's information needs.

2.2.1 Function in increasing the awareness of the value of information resources

In countries where information resources and information policies are poorly developed, user-education in the sense of 2.1.1 above is the prime requirement. If the country as a whole is deficient in information resources or if key development sectors such as agriculture or medical services have inadequate information provision, it will be necessary to create an awareness of the problems that result and of the benefits of effective information systems.

Such countries may lack a national information policy or an agency to develop a policy as well as a UNISIST "focal point".

In such situations one possibility for action is to seek the assistance of Unesco and/or bodies such as the British Council and Deutsche Stiftung für Internationale Entwicklung in designing programmes to reach development planners in government, key figures in the educational world, and emerging leaders in the library and information field.

2.2.2 Function in general education

User-education and training have significant functions at all levels of the education system. At primary and secondary levels, teaching the value of information for problem-solving and general educational purposes can equip students for post-educational interests and careers in full awareness of the potential contribution of information resources and services. Training in information-searching skills must go hand-in-hand with this educational process and, if carried out at the primary and secondary levels, will provide excellent grounding for tertiary level education. At this level (universities, higher level technical training institutions, etc.) the emphasis should switch from the educational to the training function. User-training programmes, such as those described in the UNISIST guide should be closely associated with specific learning projects. Indeed, at all levels the integration of user-education and training with general educational objectives and practices is essential. This may demand a change of attitudes on the part of teachers and educational administrators. Consequently, within the educational sector, teachers and administrators constitute one of the prime target groups for awareness-rousing user-education programmes.

2.2.3 Function in scientific and technical research

It is readily accepted today that the conduct of research in all fields, whether pure or applied, must rest upon access to information. Consequently, one role of user-education must be to convince those who support research at the government level that adequate provision must be made for the supply of information resources and the establishment of supporting information services. Under the situation of neglect described, for example, by Samaha (7) education of those at policy-making levels is essential.

For research workers education may be needed to make them aware of the shortcomings of existing systems and how to make best use of existing resources.

Where facilities are better all grades of research staff should receive some instruction (formal or informal) on the use of existing resources and of local systems. Where resources permit guidance on the use of international information systems for research purposes must also be included in training programmes.

2.2.4 Function in fields of practice

The terms "fields of practice" describes all activities in the everyday world (as distinct from the worlds of research and education) through which men and women earn their livelihood. It embraces all of the occupations including those which are either only slowly coming under the influence of science (e.g. agriculture or traditional crafts) or which prosper without such influence. Fields of practice include:

engineering in all its branches, both science-based and traditional;

agriculture and associated fields;

food processing and production;

medical services and auxiliary occupations;

public administration at central and local government levels;

applied social science areas such as child care, public welfare, town and regional planning.

The main focal points for user-training in these cases will be:

education/training institutions where the focus is upon vocational preparation;

the employing agencies, where they possess information services;

public library systems with effective reference facilities (if they exist); and

specially appointed linking agents such as agricultural extension agents and industrial-liaison officers, whose function should be to act as a channel for information from the research world, and to guide the user to an understanding of the value of information.

The primary functions of user-education and training in these fields will be:

to encourage the adoption of more efficient and more effective work practices; and

to encourage the idea that information has value for decision-making.

It should be noted that "information" connotes not only published or semi-published documents but also information sources derived from locally-produced data. Thus, in the case of public administration, an important function of a training programme may be to draw attention to the need for effective control and handling of internal financial or personnel information or of data relating to the operations and objectives of the agency. Training programmes in this area should also draw attention to non-print information sources in the form of knowledgeable individuals, organizations and institutions.

2.2.5 Function in relation to the citizen in general

Many citizens' activities will be embraced by the foregoing categories but, in addition, in their ordinary lives as citizens (as distinct from their pursuit of social roles as engineer, farmer, nurse or teacher) people have information needs. In the advanced countries this is increasingly recognized through the provision of specialized "community information services" covering such areas as welfare benefits, legal problems and consumer information, based upon either newly constituted statutory or voluntary agencies, or upon the public reference library.

In countries where such specialized services do not exist their role may be assumed by national or local government agencies and by emergent public library systems.

In either event, user-training is difficult in respect of the citizen's information needs but two possibilities appear to exist:

paying particular attention to the need for information in everyday life at the school-leaving classes in secondary education; and

effective publicity for, and training in the use of, those agencies that perform a useful function.

2.3 The content of user-education and training

The UNISIST teachers' guide referred to above offers advice on the detailed content of courses: here content is discussed briefly under three heads: national and international systems, local systems, and the training of information intermediaries.

2.3.1 Description, explanation and practice in relation to national and international systems

One of the chief aims of user-education is to create an awareness of the importance of national information systems and of the significance of international systems. This may be done by using case-studies of effective information use in other countries.

In user-training all programmes should include description and explanation of the information infrastructure regardless of the level to which it has been developed.

If the possibility exists for the use of distant computer data bases either on-line or in a batch mode, or for the provision of SDI services, then how these facilities may be used should be taught and, where appropriate, practice should be given in their use.

2.3.2 Description, explanation and practice in relation to local systems

"Local systems" are the library/information systems most accessible to the user - his school, college, firm, or other library.

The content of training courses in this respect must be determined by what is locally available (interpreted to include library/information systems which the user may not realize are accessible to him). For example, a research institute may have some informal co-operative arrangement with a nearby university library: if users are not aware of this arrangement they should be informed.

Winkworth (8) offers a categorization of information skills in a survey of user-education in schools which can be adapted to other systems. The categories and contents are shown in Table 1, which is reproduced from Winkworth's report.

2.3.3 The training of information intermediaries

There are a number of situations where practitioners in particular fields require specialist technical advice to derive maximum benefit in their work. The two groups most commonly recognized in this respect are farmers and small-scale businessmen. A number of countries have recognized that these groups need special treatment and various kinds of "information intermediaries" have been established to give information and advice. These usually have some such name as, "agricultural extension officers (or agents)" and "industrial liaison officers".

Given their specialized "link-man" role in the information transfer process, such intermediaries should be given special attention in training programmes. They must be able to discover information for themselves and for their "clients" and, where appropriate they should be able not only to disseminate information but also to teach information-searching skills.

In developed countries a variety of agencies has sprung up to offer information and advice to the citizen and it is desirable to bring those who provide these services (often voluntarily) within the sphere of influence of training programmes.

2.4 Forms of user-training

Briefly, the forms that user-education and training can take are:

2.4.1 at the simplest level, orientation courses for newcomers to an organization: formal for some groups (e.g. undergraduates at university) informal for others (e.g. new members of staff in an industrial concern). Such orientation is limited to demonstrating what facilities exist and how to use them;

2.4.2 the formal training programme of lectures and associated "laboratory sessions". The UNISIST guide for teachers is devoted principally to this kind of programme, so very little needs to be said here, except that two variants exist:

(a) the "in-house" course, intended for those who study or work within an organization; and

(b) the externally-organized course or seminar, often intended more as an educational activity;

2.4.3 self-instruction may be used for independent learning or as part of lecture programmes. Various forms exist - instructional guides to specific information tools, "how to do library research" texts (9), and manuals devised by individual library systems (10). These may also suggest topics to be dealt with in lecture programmes and in seminars.

2.4.4 a recent development in the United Kingdom is the travelling workshops experiment (11). The idea of this project (supported by the British Library Research and Development Department) is that a central agency with expertise in user-training can prepare teaching packages which are used by staff of that agency in universities and colleges. Subsequently the teaching packages can be used independently. This idea can be recommended for countries with scarce user-training resources, since it makes maximum use of a limited number of specialists and their skills. One side-benefit of independently developed teaching tools is that they may draw attention to shortcomings in local resources. For example, teachers attending these workshops may come to realize that their local resources are less suited to their needs than had been supposed.

Table 1: Thinking and Learning Skills

Research Process	Study skills (selection & evaluation of materials)	Library skills (location of materials and information)	Primary	Middle	Sec up to 'O'	6th Form
1. Define subject		Use *encyclopaedias* to obtain general survey of subject. (Alphabetical order; guides to use: index, volume letters guide words, cross references.)	I	I	R	R
	Identify purpose for acquiring information; chose important topics.		I	I	R	R
		Decide specific and general terms to search under.		I	R	R
2. Locate Information (i) Locate material in library.		Use *catalogue* to locate material on specific and general topics decided on. (Approaches which can be made to Catalogue; importance of subject index; importance of call number/class number to trace material from catalogue to shelves.)	I	I	R	R
		Use *indexes* to locate ephemeral and other materials, eg periodicals, poetry, paintings, audio visual materials etc. (Scope and arrangement of indexes.)			I	R
		Locate materials on shelves (Numerical order/order of classification for non-fiction) any special filing orders, eg a-v materials, cuttings, etc alphabetical order fiction)	I	R	R	R
(ii) Locate information in materials.		Use following materials as applicable: 1. *Books* (i) use title and preface as guide to contents; (ii) use contents page and index to locate topics.	I	R	R	R
		2. *Non-book materials* (i) use any indexing devices, notes, etc as guide to contents. (ii) use appropriate hardware, eg counter-button on tapes, fast forward and reverse to skim tapes, freeze button to freeze frames on videos and film loops.	I	R	R	R
		3. *Reference tools* eg Encyclopaedias Dictionaries Almanacs Yearbooks Atlases Trade directories Bus and rail timetables Telephone directories Bibliographies British Government Publications Patent Specifications and British Standards Abstracting tools.	 I I 	 R R I I I I I 	 R R R R R I R R I 	 R R R R R R R R I I I I?
		4. *Periodicals, magazines and newspapers* (knowledge of content, arrangement; use of index, if any).		I	R	R
		5. *Ephemeral materials* eg cuttings (knowledge of arrangement).		I	R	R
(iii) Locate information outside library and school.	Communication skills. Surveys: interviewing techniques and questionnaire techniques Gather information from field trips.		I I	R I R	R I R	R R R

Table 1 continued

4. Select Information	Identify purpose for acquiring information		I	I	R	R
	Formulate questions requiring answers.		I	I	R	R
	Skim to see if material contains answers to questions.			I	R	R
	Special skills selecting information from audio-visual materials, eg listening skills, interpreting visual information knowledge of symbols etc.			I	R	R
	Re-study and select relevant information.			I	R	R
5. Organize Information	Take notes, grouped under headings derived from formulated questions.			I	R	R
	Note down sources information.	Compile bibliography.		I	I	R
	Define unknown words	Use dictionaries	I	I	R	R
5. Evaluate Information	Evaluate accuracy and authority of source.	Use copyright date; reference sources to check author's qualifications, etc.			I	R
	Understand what information means.		I	I	R	R
	Distinguish between: fact and opinion; fact and fiction; relevant and irrelevant; essential and non essential.			I	R	R
	Compare information drawn from more than one source.			I	R	R
	Relate information to what is already known			I	R	R
	Draw references, make generalizations, conceptualize.		I	I	R	R
	Reach tentative conclusions.		I	I	R	R
6. Communicate results	Organize information under main headings; determine sequence.			I	R	R
	Make outline (avoid copying directly from sources, acknowledge quoted materials use footnotes).					
	Pay attention to style and vocabulary.			I	I	R
	Use of illustrative materials.	May include skills in making a-v materials.			I	I
	Proof-read and revise.					

I = Introduce, R = re-teach and reinforce.

Although the "travelling workshop" has been designed with academic institutions in mind it can be adapted to other kinds of libraries and other institutional settings. For example, it would be possible for a ministry to create teaching materials for use in research institutes under its control.

The method or mix of methods chosen will depend upon: the target group, the nature of local resources, the availability of trained teachers, and the place of instruction.

PART 3

SETTING GOALS AND OBJECTIVES: STRATEGIC PLANNING OF USER-TRAINING PROGRAMMES

3.1 The planning organization

Presuppositions underlying the content of these guidelines are:

(a) that a national information policy exists, or that an agency has been given the task of formulating such a policy, as suggested in the Guidelines on the planning of national scientific and technological information systems (12),[1]

(b) that the objectives set out in the UNISIST proposals (13) are part of national policy and that it is intended to implement the objectives for national and international action (14); and

(c) that the relationships among concepts such as national policy, information services, user-needs, user-education, user-research and professional education are recognized.

The national focal agency should have developed relationships with relevant ministries, key educational institutions, and international organizations. It is then equipped to set up a planning committee which will first have to report within a given period of time on the requirements for establishing a national policy.

The terms of reference should require the planning committee:

(a) to identify the general aims or philosophy of user-education and training;

(b) to state the general goals of a national policy, preferably with time-scales attached; and

(c) to identify what steps should be taken to collect the necessary data to prepare more precise, achievable objectives.

In subsequent stages the planning committee will collect the necessary data, specify the precise objectives, and design or commission action plans for the achievement of objectives.

Tasks such as these have implications for the composition of the committee.

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(1) However the lack of a national policy or plan should not be regarded as a deterrent to action on the part of individuals or professional groups who wish to make a start in this field. Unesco has already produced a manual on the Education and training of users of scientific and technical information and the expertise gained through use of this manual could be valuable in the process of developing a plan.

A small nucleus of permanent members with power to co-opt others for specified purposes and periods of time is the most appropriate kind of structure. The nucleus should consist of representatives of the key organizations concerned with the development of policy - the focal agency itself, government departments responsible for scientific and technical policy, and leaders in the professional field.

The selection of co-opted members will depend upon the stage reached by the committee: for example, at the stage of enumerating goals representatives of professional societies and academic institutions may be co-opted, whereas at the data-gathering stage representatives of priority user-groups may be needed and at the action-planning stages specialists in educational methods may be wanted.

The committee should have a flexible structure to prevent the decline in imagination which may occur when a committee is composed of a self-perpetuating membership.

The prior conditions described above may not exist in a country. What can be done under such circumstances? How can a national policy be evolved?

It is questionable whether it is worthwhile to undertake the development of a user-education policy in the complete absence of a national information policy or a national focal agency; but the advantages of making key groups aware of the potential of information as quickly as possible have been pointed out (2.2.1).

The answer lies in individual action and co-operation. The head of a potentially significant library or documentation centre might persuade others of the value of user-education; as a group these could present a united front to government agencies and international organizations in seeking support and advice for a planning committee.

The head of a documentation centre, for example, could establish a committee (possibly under the auspices of his own organization) composed in such a way as to be perceived by government to be representative of the necessary interests. Where professional associations are active and well-organized the initial moves could well be made through them, possibly with a working party representing, in addition, scientific and technical associations.

However the initial moves are accomplished the one essential objective of a committee formed in this ad hoc manner is to achieve a position of legitimacy in the eyes of government and other key agencies; this requires hard, voluntary work for those who wish to see it succeed.

After its establishment and recognition, this kind of committee can then proceed in much the same manner as a more formally constituted and "official" committee.

The committee must ensure that discussion proceeds in a planned and coherent manner. One appropriate way to ensure this is to call for discussion papers (or where funds permit, to commission such papers) from the interest groups represented on the committee.

3.2 The planning process

Planning is a process which while oriented to the future must take account of the here-and-now. Plans must be realistic, capable of attainment, and understandable to those who are to implement them as well as to those who are to "consume" the planned activity.

Planning may have both long-term and short-term implications or the emphasis may be mainly on one or the other of these. However if the emphasis is put upon short-term actions without reference to the long-term implications it may prove, in the long run, impossible to build upon what has been achieved. Similarly, if the emphasis is upon a goal distant in time, some thought should be given to the short-term and medium-term goals which will contribute to the achievement of the distant goal.

Keren (15) outlines the planning process in a logical manner which can be paraphrased as:

(a) set out the requirements and aims of the body which has established the planning committee;

(b) review and evaluate existing reports and other documents;

(c) identify the policy constraints of the system of which user-education forms a part;

(d) set out the existing state of the national information infrastructure;

(e) analyse the existing infrastructure to identify problems and potential solutions;

(f) elaborate upon the requirements and objectives set out at stage (a) above;

(g) specify short-term objectives;

(h) calculate costs, assign priorities, and identify preliminary changes needed in the system;

(j) revise action plans in the light of what may realistically be achieved;

(k) submit the revised plans to the parent organization.

To these can be added:

(l) following the approval of plans take steps to have them implemented;

(m) set up procedures for monitoring and evaluating the planned activity.

Keren also gives a schematic arrangement of the "principal planning parameters" (16) and a similar diagram showing some of the major influences in the planning of user-education programmes is given as Figure 2, to illustrate the sections that follow.

3.3 Clarifying the underlying philosophy of user-education

Statements of philosophy should be formulated so that the underlying values can be made clear and can be understood by all engaged in the planning process. Examples of statements of broad philosophical aims are to be found in many sources, from UNISIST documents to standard works on user-education, and such statements can be analysed to identify the relevant values, for example:

access to information is a citizen's right of which he should be made aware, through user-education;

information systems are inefficient if not fully used and user-training transforms potential users into actual users;

lifelong learning is a desirable social aim which can be assisted by training in information use.

Note that since philosophical or value statements relate user-education and training to social aims in general or to value aspects of national information systems, such statements must be related to the circumstances of a particular country's social structure, development plans, and the stage of development of its information infrastructure.

When statements have been evolved and accepted by the planning organization they should be recorded so that goals and objectives can be tested against them.

3.4 Formulating goals: inputs needed from the environment

In these guidelines a distinction is made between "goals" and "objectives":

> "Goals are statements of desired intent; they are directional and involve basic value assumptions. Objectives are statements of anticipated achievement and these can be measured" (17).

The consequence of this is that goal statements will be closely related to the statements of philosophy and, in order to formulate goal statements, inputs of various kinds are needed from various organizations, groups and sectors of the environment. These are discussed below.

3.4.1 Identification of key development areas within national plans

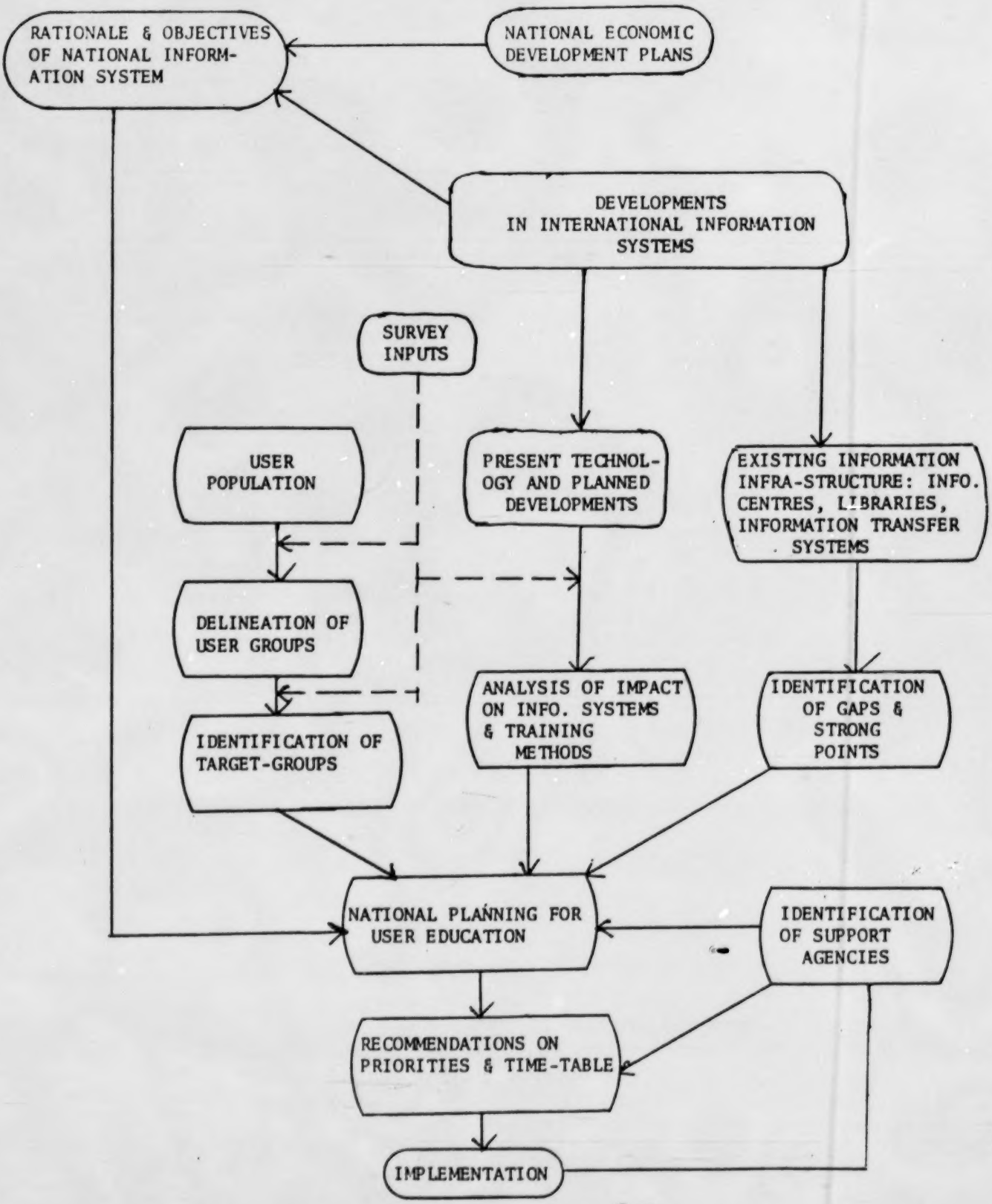
To be of benefit in the development process a national policy on user-education and training must be in accord with national economic planing. The committee must be aware of which sectors in the economy are to be given priority in development plans and of the social and educational consequences of the priorities. Where resources are scarce they must be concentrated so as to benefit the important development sectors.

Economic development plans often have general social implications. For example, a reduction of the agricultural sector manpower needed to increase industrial output results in increased urbanization and an increase in the information needs of ordinary citizens as they attempt to cope with rapid change. There will be educational implications of a direct and indirect nature: industrialization demands not only technologists but also managers, accountants, and a host of other specialists. To produce skilled workers in these areas demands more teachers with consequent need for access to specialist literatures. The Committee will keep in mind the importance of improving awareness of the value information may have in encouraging local technology and endogenous development generally.

Information of this kind ought to be available from national development agencies, but sometimes it is not available in the form or in the depth required. Also, skilled interpretation may be needed to uncover the social and educational implications of economic plans. If, therefore, a specialist from the appropriate ministry or development agency can be attached to the planning committee for a limited number of meetings some significant benefit may result.

Principal Planning Parameters

Figure 2


RATIONALE & OBJECTIVES OF NATIONAL INFORM-ATION SYSTEM
NATIONAL ECONOMIC DEVELOPMENT PLANS
DEVELOPMENTS IN INTERNATIONAL INFORMATION SYSTEMS
SURVEY INPUTS
USER POPULATION
PRESENT TECHNOL-OGY AND PLANNED DEVELOPMENTS
EXISTING INFORMATION INFRA-STRUCTURE: INFO. CENTRES, LIBRARIES, INFORMATION TRANSFER SYSTEMS
DELINEATION OF USER GROUPS
ANALYSIS OF IMPACT ON INFO. SYSTEMS & TRAINING METHODS
IDENTIFICATION OF GAPS & STRONG POINTS
IDENTIFICATION OF TARGET-GROUPS
NATIONAL PLANNING FOR USER EDUCATION
IDENTIFICATION OF SUPPORT AGENCIES
RECOMMENDATIONS ON PRIORITIES & TIME-TABLE
IMPLEMENTATION

3.4.2 Implications of national educational policy

Although not all user-education and training may be associated with educational institutions, it will be apparent that, in many instances, the best and most logical place to give instruction in the value and use of information resources will be the school, the technical college, the university. For example, if children are to learn the value of information and the role that information-seeking plays in the learning process instruction must take place in the school. At the other extreme, the role of information in medical research and practice must be conveyed through instruction in the medical school.

For these reasons, then, all aspects of educational policy are of significance to the work of the planning committee and special knowledge must be brought to the committee by either a permanent member whose brief it is to cover this area or a temporary, specialist member.

3.4.3 The information infrastructure and national information policy

The design of any aspect of national information policy is dependent upon the state of the existing infrastructure. User-education and training is practicable only in so far as it can be supported by actual libraries and information services or some form of co-operative or centralized network of document supply or information transfer.

In this respect particular sectors may be better developed than others and different groups within sectors may be better provided for than others.

Inequality in information resources may be structural and the crucial issue in some sectors may be information provision rather than user-training.

One of the crucial tasks of the committee, therefore, must be to build up a comprehensive picture of the existing information infrastructure, with its highlights, its gaps and its inequalities. If work has begun on the preparation of a national information policy much of the required information should be available. Specialists may have surveyed particular areas or, where there are library schools, students may have undertaken some of the necessary work.

Where a focal point does not exist the committee membership must be selected, in part, for its knowledge of the composition, problems, and potentialities of the national library and information "system".

3.4.4 Identification of user-groups, their information needs and associated training needs

In determining national policy it would be unwise to reach any conclusions without taking into account the needs of information users. The resultant policy would probably contain many errors of judgement.

An illustration at a specific level is provided by Samaha in his study of Tanzania. He describes the efforts of foreign doctors to provide information for doctors in smaller district hospitals and health centres. They began by circulating abstracts but discovered that

the information was not used and changed their methods to the organization of a twice yearly seminar which conveyed relevant information (18).

Every country contains numerous groups of users and potential users and it will be necessary for the planning committee to have a clear understanding of the principal categories and their information requirements before reaching decisions on training needs.

Havelock (19) suggests the following four broad categories within the total "knowledge macrosystem":

research subsystems;

development subsystems;

practice subsystems; and

consumption subsystems;

and within these he identifies specific subgroups; for example, within the practice subsystem:

the practice professions;

the product organizations; and

the service organizations.

This typology can then be applied to any economic sector to aid identification of information-user groups. For example, within, say, agriculture applying the first broad categorization would result in identifying:

research workers in agricultural research institutes, university departments of agriculture and the research laboratories of industrial organizations;

development engineers working for manufacturers of agricultural machinery;

farmers and specialized occupations within this group; and

consumers of agricultural produce.

Individuals within these categories are likely to have information needs that are more similar than those that exist between categories. The research worker looking at pests will need research literature on virtually all aspects of the life-cycle of a particular pest - its reproductive cycle, its breeding grounds and conditions and so forth. The scientist working on the development of a particular deterrent to this pest will have different needs: he wants to know what kills the pest with least damage to the rest of the environment. The farmer will simply want to know how to detect the presence of the pest and how to get rid of it - his need is for what may be called "recipe" knowledge rather than scientific knowledge. The consumer (who may be lay citizen or producer of food products) may wish to know how to recognize pest damage and what its consequences are for the quality of the product and its hazards to health.

Any categorization can be used to aid identification of user-groups and to assist in the organization of information on users' needs (20).

It is necessary to bear in mind several important facts on the inter-relationship between information needs and training needs (21). However, concern with categorization within sectors should not detract from the needs at overall, governmental level. It is here that information of relevance to decision-making on national development policies can be particularly significant:

firstly, not all needs are associated with academic study and research: they arise naturally out of the work people perform and differ from occupation to occupation. Consequently, externally-generated information assumes less importance for some groups than the information generated within their own organizations. "Management information", which consists principally of product and production data, market trends and financial data, is, perhaps, the most extreme example, but this kind of information need occurs in other situations. How far national policy can direct attention to training in the effective use of "organization-specific" information is a moot point, but the very recognition of the issue is a valuable corrective to the all too-prevalent idea that "the literature" provides all the answers to information needs. A further consequence is that "communication needs" should be distinguished from information needs: the effective transmission of information is often impeded by communication barriers as much as by lack of awareness of the value of information. Again, national policy may need to direct attention to the need for training in good communication practices in organizations;

secondly, the use of documentary information demands at least a "functional" level of literacy and this may not exist among some user-groups. Oral transmission of information may be the dominant mode and in this case the need for information "link-men" and for their training in information use and communication techniques must be recognized. Here, however, one enters an area of potential conflict: is training of this kind a function of information agencies, national or local, or is it a function of the relevant advisory service? There must be agreement and co-ordination among interested parties on this issue;

thirdly, information of relevance to specialists may be in foreign languages. Where access to such materials is essential it is legitimate to draw attention to the need for rapid-learning foreign language courses. If no other national agency takes responsibility for organizing courses of this kind then the planning committee can seek to organize courses or at least suggest how other interested organizations may evolve a programme;

finally, information needs and the national information infrastructure change over time. Consequently, in the early years of the development of a national information system a committee may have to stay in continuous existence, but even in later years it will be desirable to reconvene the committee at regular intervals to review the situation, to report upon progress, and to suggest new lines of approach to newly-recognized problems.

3.4.5. Identification of needed support groups in the national situation

A national policy cannot be evolved in a vacuum: there must be co-operation, collaboration and co-ordination with national economic planners, with other committees working on aspects of national information policy and with other agencies and organizations whose support may be necessary to the implementation of a programme.

Depending upon the user-group, programme planning may involve university teaching staff, librarians and information workers in key institutions, research managers, and industrial managers. Their attitudes towards information services and user-education must be supportive and the planning committee must find ways of fostering support and goodwill.

A user-education programme must also be envisaged in broad terms, bearing in mind the point that many information users are outside the formal educational structure. The kinds of organizations whose support must be solicited will include among others:

educational institutions at all levels, national bodies concerned with educational policy, and professional teaching organizations: their support is needed if user-education is to be incorporated into curricula;

other organizations in the information infrastructure: the national library and key libraries/information services in all sectors, and particularly librarians and others who will be called upon to carry out the programmes. The UNISIST proposals direct attention (22) to a specific case which illustrates this general point when they suggest the formation of a "central source of advice to scientists and information specialists on how to make best use of" data-base networks. Liaison between the planning committee and such a central source would be essential;

international organizations and bilateral assistance agencies such as the German Foundation for International Development, the British Council, and the United States Information Service. Such agencies may have training resources or provide specialist advisers and access to information on training programmes in their home countries which could be of relevance to the planning committee (23);

scientific, technical, other learned societies and professional associations: these bodies may be fruitful contacts in several ways;

(a) their meetings, particularly annual conferences, may provide forums for workshops or seminar sessions on the value of information or for training in the use of specialized information services;

(b) the support of leaders in their fields may be solicited to give the programme the backing of informed professional opinion;

(c) their journals, particularly those which contain news and information of "professional" rather than "scientific" interest, may offer a medium for articles on the value of information and for advertising programmes;

government departments or other government-directed agencies which have educational functions (e.g. running short courses on new technologies) may be willing to build user-education programmes, oriented to short-course topics, into their activities. The "travelling workshop" concept may be of particular value here.

3.5 The statement of goals

An early product of the planning committee's discussions should be a "statement of goals" which can be disseminated for comment and evaluation.

The statement of goals should include information on the establishment of the committee, its membership, and its role in national information policy (as laid down either by the national focal point, if it exists, or as the committee members see it). There should also be a general statement of the guiding philosophy of the committee's activities (since this may be necessary to understand the choice of goals) and of the factors in the national situation that have determined the choice of goals. There should then be a concluding section on the distribution of the statement which should include an invitation for comments and full information on submission procedures.

As used here goals are "statements of desired intent" rather than of "anticipated achievement" (24). DeProspo and Samuels note:

> "Goals are statements which help you plot the direction of your program... by indicating more specifically the path which you must take, but /which/ do not specify the precise means by which change for improvement will take place." (25)

Since the formulation of policy is so culture-determined it is not possible to offer a "model" statement of goals; however, it is possible to offer a sample of statements as in Figure 3.

Figure 3: GOAL STATEMENTS

Example 1: efforts will be made to increase the awareness of scientists and technologists employed in government research institutes as to the value of information for their work.

Example 2: the participation of educational bodies will be sought to ensure that in curriculum development at the secondary school level emphasis is put on the need for students to acquire information-searching skills.

Example 3: a programme will be mounted to train industrial liaison officers in information-searching skills, so as to be better able to answer client's information needs.

Example 4: a major aim will be to ensure that all university students, whatever their subject of study, have received a minimum level of information-searching training before graduation.

Example 5: developments in the national information system will be carefully examined for their user-education implications and opportunities.

Example 6: a programme of development of user-education packages for use in co-operation with scientific associations will be undertaken.

The statements in the box have certain characterisitcs in common:

they have long-term rather than short-term implications;

they identify particular user-groups or organizations;

they are general in tone, they do not make specific statements on how the goal is to be achieved; and

they can be related to some rational assessment of the local situation.

These examples are not intended to constitute a total set of goals: a planning committee may wish to identify many more or to restrict its aims severely.

Assistance may be needed to ensure that meetings are effective. Specialists in group discussion and its effective use are to be found in the "organizational behaviour", business management, or education departments of universities or may be identified through Unesco, the British Council, etc.

It is likely that the committee will discover that certain goals are impracticable because of shortcomings in the national information system such as inadequate or unequally distributed resources. If a planning committee exists for national policy as a whole these findings should be communicated to that committee. If not, they should be documented for referral to appropriate groups or agencies and will constitute major constraints on the identification of realizable goals.

3.6 Setting objectives

Much attention has been given in recent years by writers in the field of management to the idea of "organizational objectives" and concepts such as "management by objectives" (26). DeProspo and Samuels offer a listing of characteristics in terms of library planning:

"A statement of objectives:

1. Is expressed in time-bound terms.
2. Clearly suggests how to provide a service.
3. Is directed towards a specific group of users.
4. Is achievable within a specific period of time.
5. Articulates a specific service for meeting needs.
6. Contains criteria for measuring attainment of objectives in terms of performance, efficiency, and effectiveness.
7. Delineates the group from which data will be collected in order to assess whether or not the objective has been achieved.
8. Is derived from the statement of goals." (27)

It is recognized that the writing of statements of objectives which observe all of these rules is difficult. The desirable clear hierarchical structure relating objectives to goals and goals to philosophy can be expressed as in Figure 4.

Arriving at statements of objectives involves refining the information collected at the goal-setting stage and identifying key issues discussed in the subsections below.

3.6.1 Selecting the principal target groups

A target group consists of a defined set of users, or potential users, of information which is to be the focus for a user-education or training programme.

In selecting these user-groups the information obtained at other stages of the goal-setting process is used to focus attention upon attainable objectives which are relevant to particular goals and which are in accord with the guiding philosophy. For example identifying the key economic development areas (3.4.1) may point to a need to focus upon users in one or more of these areas; or studying national educational policy (3.4.2) may direct attention to an opportunity to take advantage of forthcoming curriculum or other changes. Again, the state of development of libraries and information services will be an important constraint: it may be socially desirable to initiate a programme at the secondary school level - but there will be little point if the library resources are totally inadequate. It may be more desirable in these circumstances to put forward a "consciousness-raising" programme for senior administrators in the educational service. National planners may be a necessary target group. The national economy, its technology and manpower may be significantly influenced through the supply of full and accurate information to ministers, their advisers and civil servants.

When target groups are finally selected it is a good idea to record the reasons for the choice of these groups so that at the tactical planning stage (Part 4 below) it will be possible to make reasoned choices among groups competing for scarce resources.

3.6.2 Identifying the form of programme for each of the target groups

At this point, the questions to be asked are:

is the programme to be chiefly educational or is it to involve training in information skills? (see 2.1.1 and 2.1.2 above);

is the programme to involve publicity and persuasion, seminars and workshops, courses and projects, or other devices?

The answers will be decided on the basis of the national situation as discussed in 3.4 above. Whenever difficulties are encountered in making decisions, alternative statements of objectives should be formulated for further consideration at the tactical planning stage.

3.6.3 Identifying where the education and training programmes should take place

This will be determined by three of the factors discussed in 3.4 above:

the state of the information infrastructure will determine which libraries and other information agencies are equipped with the manpower and other resources to mount programmes;

the nature and location of the target groups will determine whether educational institutions or other agencies are most appropriate, and whether a centralized or geographically dispersed programme of action is appropriate;

the amount of support obtained or guaranteed by other organizations (see 3.4.5) will determine how far they can be involved.

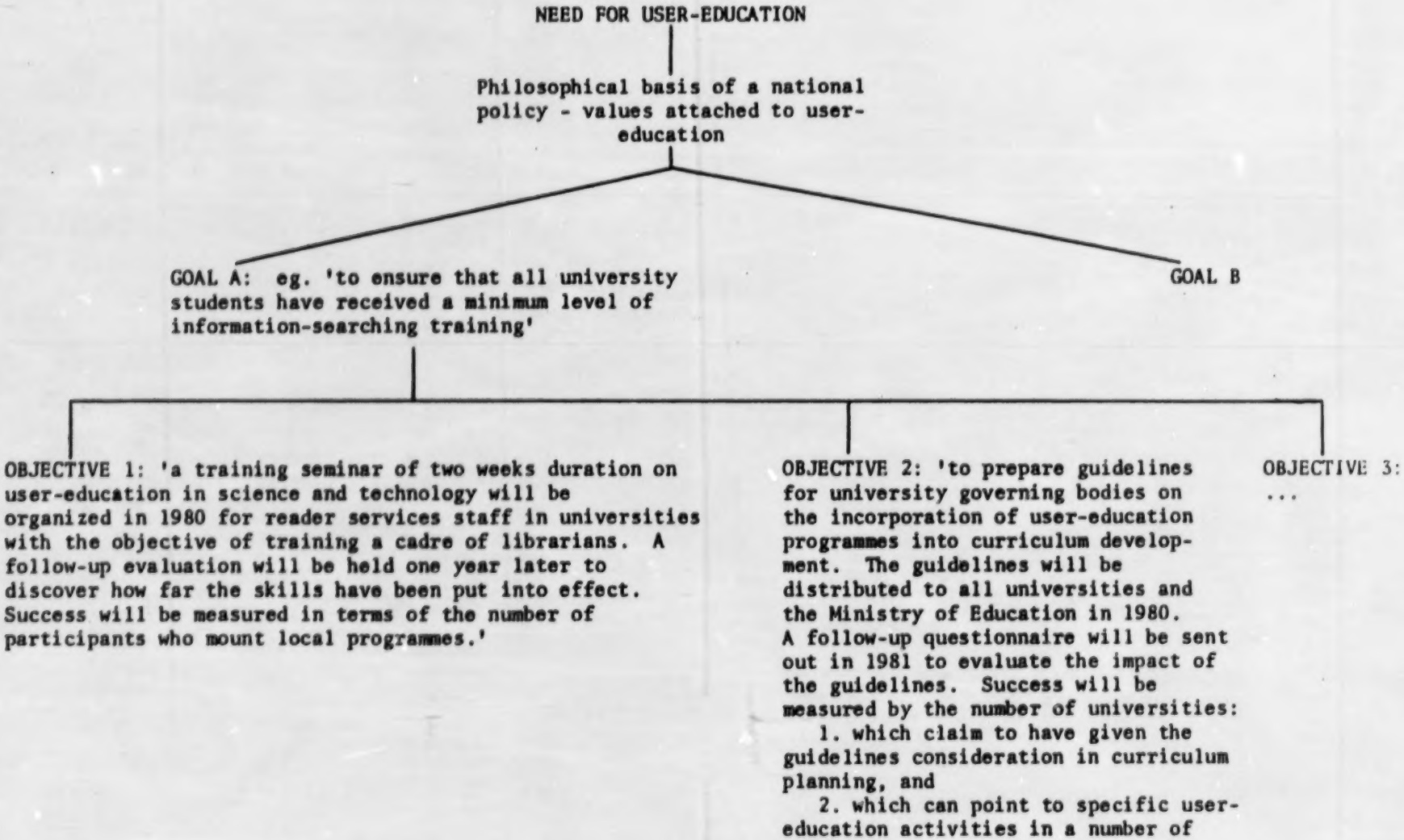

NEED FOR USER-EDUCATION
Philosophical basis of a national policy - values attached to user-education
GOAL A: eg. 'to ensure that all university students have received a minimum level of information-searching training'
GOAL B
OBJECTIVE 1: 'a training seminar of two weeks duration on user-education in science and technology will be organized in 1980 for reader services staff in universities with the objective of training a cadre of librarians. A follow-up evaluation will be held one year later to discover how far the skills have been put into effect. Success will be measured in terms of the number of participants who mount local programmes.'
OBJECTIVE 2: 'to prepare guidelines for university governing bodies on the incorporation of user-education programmes into curriculum development. The guidelines will be distributed to all universities and the Ministry of Education in 1980. A follow-up questionnaire will be sent out in 1981 to evaluate the impact of the guidelines. Success will be measured by the number of universities:
1. which claim to have given the guidelines consideration in curriculum planning, and
2. which can point to specific user-education activities in a number of departments.'
OBJECTIVE 3: ...

Figure 4

PGI-80/WS/28 - page 2

3.6.4 Deciding upon the time-frame of the programme

Objectives should state a date by which it is anticipated that the objective will have been attained. In some cases these can be set in relation to data collected; for example, target dates may already exist for educational policies which can be matched by dates for user-education policies; or economic development plans may be expressed in "time-bound" terms. Too much time should not be wasted on deciding time-scales, however: there must be some flexibility and, in any case, the next planning stage offers the opportunity for review.

3.6.5 Deciding how the programme is to be evaluated

The essential questions here are:

how do we measure achievement? and

how do we assess whether the achievement is satisfactory?

Such questions can be answered at this stage only in general terms: how achievement is measured will depend upon what targets are set. Thus, objectives may include targets written in terms of the number of users to be involved in training, the number of non-library agencies (such as professional associations) to be co-opted, the extent to which skills are acquired by users, the extent to which attitudes towards the value of information become more positive and so on. Targets which can be simply measured (numbers of things) are easier to monitor and assess than targets which are less tangible (attitude change, acquisition of skills) and evaluation of the latter will be more difficult and may need the assistance of specialists.

Whether the level of achievement is satisfactory will depend upon what is agreed to be a realistic expectation of the extent to which the targets can be realized. It is highly unlikely that a programme will be 100 per cent successful: not everyone will acquire skills as a result of a training course; of those who acquire them, not all will use them and so on. The planners, however, must decide what is realistic - can they expect 80 per cent of the trainees to demonstrate a satisfactory level of mastery of the skills, and then 50 per cent of those actually to use them thereafter? In the first "round" of programmes it is likely that the expectations will have to be expressed in arbitrary terms: evaluation should reveal how good the guesses were and act as a guide to future expectations.

3.7 The statement of objectives

The objectives should be set out in a document to facilitate review by all members of the committee and the collection of goals and objectives can be reported in the same document, preferably in a hierarchical structure to show their relationship.

The examples given in Figure 5 must be taken not as objectives arrived at through examination of a "real" situation, but simply as a hypothetical statement to assist visualization of what a goals/objectives document might look like.

Figure 5: GOALS AND OBJECTIVES

Goal A - Efforts will be made to increase the awareness of scientists and technologists employed in government research institutes as to the value of information for their work.

Objective A.1 - the directors of all institutes will be invited to a Seminar on Scientific and Technical Information to be held in 1982 which will (a) present information on what resources are available to them and their research workers, (b) present case-studies on the roles information workers can perform in research institutes, and (c) present a number of films produced abroad which show the value of information systems. The seminar will be organized in association with relevant agencies to ensure the active participation of relevant visiting foreign specialists. Evaluation will be done by the participants and success will be measured by their evaluation and by achieving the participation of 75 per cent of those invited.

Objective A.2 - for those institutes with a librarian or information worker a Seminar on User-Education will be organized at the same time and in the same venue as the seminar outlined in A.1. The seminar will attempt to train the participants in user-education, and to provide some basic instructional packages for use in the institutes. The seminar will use some of the same materials and speakers as in A.1. Evaluation will consist of a participant evaluation and a follow-up study six months later to discover how far the aims of the seminar have been met. Success will be measured by achieving a 75 per cent participation rate, by a majority of positive responses to the participation evaluation, and by at least 40 per cent of the participants making use of the instructional materials in their own institutes.

Objective A.3 - the work of constructing the teaching packages needed for the seminar in A.2 will be contracted (through competitive tender) to an appropriate organization in 1981. The packages should be available for pre-testing by December 1981 and their success will be determined by the extent to which they can be used (a) in the seminar and (b) by librarians and information workers in the field.

3.8 Evaluation of goals and objectives

In Figure 1 evaluation is shown as a process which pervades the entire planning and implementation activity. Whenever decisions on goals and objectives are taken they should be evaluated to determine which should be considered in the next phase of the planning process.

In Stufflebeam's terms (28) what we are concerned with here is context evaluation and process evaluation. Context evaluation involves questions such as:

have the important user-education needs been identified?

has sufficient information about the environment been obtained to enable the right priorities to be determined?

have the appropriate information agencies been involved in the planning?

Process evaluation asks questions such as:

what is the relative significance of the goals that have been decided on?

what is the relative strength of the objectives that have been defined?

has the planning committee met its own objectives?

Evaluation at this stage involves:

(a) completion of the goals/objectives document and its circulation, with requests for comment and criticism (perhaps phrased in terms of questions such as those above) to be made within a limited space of time, to a small group of informed individuals in key posts;

(b) receipt and evaluation of the comments and criticisms by the planning committee; and

(c) modification of the goals and objectives in the light of the comments.

Although the planning committee must make the final decision on which comments to accept as valid and which to reject, it is unwise to adopt a proprietary attitude which automatically rejects any criticism. Even comments and criticism which appear ill-informed and pointless may contain a kernel of truth.

PART 4

IDENTIFYING THE MEANS FOR THE ACHIEVEMENT OF GOALS: TACTICAL PLANNING

4.1 Introduction

"Tactical planning is not primarily concerned with underlying purposes, but rather poses this question: 'How best can we accomplish what we plan to do?'... tactical planning is involved in determining the basic resources needed and the tactics involved in obtaining and using them effectively." (29)

Strategic planning asks "What do we want to do?", tactical planning seeks answers to the question, "How do we want to do it?" The two chief phases involved are:

the determination of alternative and/or complementary programmes that will put the agreed policy into effect; and

the combination of alternatives to constitute a user-education programme.

The achievement of different objectives may need different kinds of programme design, from the formulation of more detailed guidelines for individual institutions or kinds of institution, to the organization of courses, or the preparation of self-instruction materials for use by those not associated with educational institutions.

4.2 Re-examination of environmental inputs

As in the strategic planning phase, one of the main aspects of tactical planning is the review of data on the actual situation. Also involved is the identification of constraints that will affect the design of the programme and the review of gaps in the planning committee's understanding of the situation that need to be filled before decisions can be taken.

The principal steps are:

4.2.1 Review of data collected in the strategic planning phase

At the beginning of the tactical planning stage it is necessary to review the assumptions upon which the objectives of national policy have been based. This involves asking questions such as:

has our assessment of the key economic development areas been accurate? Have any events led to a change in priorities since our conclusions were made?

is our assessment of the impact of national educational policy correct? Have we consulted the right people and, if so, does feedback from them support our view?

are there gaps in our understanding of the information infrastructure? Have we correctly foreseen the developments which are to occur over the next two, five, ten years?

do we have sufficient information on the needs of the user-groups with which we will be most closely concerned? If not, is the lack of this information likely to be critical?

have the appropriate support groups been contacted? Is their support ensured? If not, what are the consequences for our objectives?

Questions such as these may lead to the identification of gaps in knowledge, to a refinement of objectives, and to a review of policy in general.

4.2.2 Identification of constraints within the information infrastructure

For questions of how objectives are to be realized the completeness, accuracy and reliability of information is of greater significance than in strategic planning and the committee must begin to identify constraints that will have a major impact upon how policy is implemented.

Obviously, the constraints and opportunities within the existing information infrastructure will be crucial, and the planning committee, at this stage, must review available information to:

identify the focal agencies (libraries, information centres, documentation units) which can be used to implement policy;

recognize structural inequalities which may act as a barrier to the achievement of objectives; and

identify those sectors in which agencies other than libraries or information centres must play a part.

In the review of data care must be taken to include consideration of non-traditional information systems. For example, in Tanzania, Samaha noted the existence of a special function of the Research and Disease Control Section of the Ministry of Agriculture which involved documenting and communicating research findings both internationally and in Tanzania (30).

4.2.3 Identification of social and organizational constraints

User-education and training are not simply technical tasks: they are attempts to change attitudes and behaviour and, consequently, may be radically influenced by social and organizational factors. Education and training cannot be carried out without organization and without the assistance of social institutions.

A national policy is focused upon change and national planners are aware that certain social groups and organizations may be more resistant to change than others.

In rural communities, for example, tradition often determines behaviour and if insufficient attention is given to traditional practices the full benefits of a policy may not be felt. Kodagoda recognized this in his study of Sri Lanka when he points out that existing traditional methods of communication should be used to provide development support (31).

Similarly, in the small industry sector it is often difficult to introduce innovations because of a similar tendency towards respect for traditional practices - this is why training intermediaries in information-seeking may be more effective than attempting to reach the industrialist himself.

Almost any kind of large organization may have practices and structures that reject innovation, particularly innovations which are not seen to have a direct effect upon production, profits, or the general targets of the organization. Here the task of user-education is primary.

A degree of sociological awareness must be exercised in assessing the readiness of the organizations or communities within which the target groups exist, to accept notions of innovation and change.

4.2.4 Identification of technical and manpower constraints

The effectiveness of programmes depends ultimately upon the availability of appropriate technology and manpower.

Technological constraints determine the means: for example, there is little use in developing a co-operative system for the production of instructional tape/slide programmes if few institutions are equipped to

use such programmes in their teaching. To introduce user-training programmes in on-line information searching where computer terminals are rarely found and where few users have access to them would be inappropriate. A wide range of instructional methods is available using very simple technology or very complex: national policy must have regard to what is appropriate. In this connection it has to be remembered that in educational programmes contact with "advanced" technology may have a stimulating effect and that once there is an understanding of the significance of new techniques there can be an upsurge of interest and pressure towards their adoption.

Potential manpower constraints are probably easier to appreciate than the technological: education and training programmes need people skilled in information-seeking with a wide knowledge of information resources of all kinds and with proven teaching ability. Whether such a group exists must be known and the planning committee must give attention to the extent to which training in user-education is called for, and to having this training carried out.

4.2.5 Identification of financial constraints

To do anything new involves spending money, but to do nothing on the excuse that it will be impossible to find the funds is to admit defeat before the planning process begins. At some stage, however, it will be necessary to discover how much money is available both nationally and locally for the implementation of programmes.

It is unlikely that any organization will be prepared to make financial promises on the basis of vague ideas for programme plans. Consequently, it is desirable to formulate a programme and explore its costs before approaching funding bodies.

However, it should be possible at an early stage, to identify the agencies that may be interested, or the government departments that may have programme headings of their own under which user-education may be placed, or international organizations that may have relevant development programmes. In respect of programmes to be implemented within specific regions or institutions, it should be possible to discover what competing claims there are upon the budget. All of this information can provide a general background against which proposals can be examined.

4.3 Evaluating programme alternatives

It seems appropriate at this point to try to make the distinction between "objective" and "programme" clearer.

A statement of objectives includes certain elements which relate to implementation and attainment; these are:

- the statement of the time-scale;
- the definition of the target group;
- the statement of the method of evaluation; and
- the statement of the measurement of success.

However, each statement of objectives may be an alternative to any other and a programme is produced by evaluating each objective in terms of its validity and feasibility with reference to the constraints discussed above. A programme, in other words, consists of evaluated objectives which contribute towards an overall planning goal and which co-ordinates the time-scales, target groups, modes of evaluation, and measurement into a coherent whole.

4.3.1 How relevant is the objective to the planning goals?

It is well to ask, "Will the attainment of this objective really contribute to the goal we had in mind?" Those statements of objectives which fail this step should not be merely rejected; rather they should be incorporated in the draft programme plans as items that have been considered and the reasons for their rejection should be noted. Indeed, it may be advisable to put the rejected ideas to each of the following steps since one of the results of the evaluation process may be a reconsideration of the original goals.

4.3.2 Does the proposal require national, central direction or are its implications local?

A programme may include three categories of ideas: those requiring central direction and national action; those capable of local implementation; and those which may involve both central and local activity. This particular evaluation will have significant implications for staffing.

4.3.3 What staffing implications are there? Can they be satisfied?

Each proposal must be tested as follows: can this idea be implemented with the existing manpower? can a specialist or specialists be obtained to implement the proposal? can the necessary manpower be trained in the time available?

Out of this examination new staff-training objectives may emerge and some proposals may have to be shelved until training has been done.

Other agencies, or other arms of the national focal agency may assist in this. For example, the UNISIST proposals point out that, where telecommunication networks for information-searching exist, a central source of advice should be created (32). Any such advisory agency should also be involved in the education of librarians and information workers.

4.3.4 What are the technological implications? Can they be satisfied?

Each proposal should be looked at carefully in these terms, both those that make clear reference to technology; for example, that a slide/tape programme be produced; and those that do not, for example, that a lecture course be held.

The first type should be examined in respect of alternatives. For example, a slide/tape programme requires a slide-projector and a tape-recorder: could the same objective be met by having overhead projector transparencies and a standard script for the instructor to read, or by having professionally produced charts for a flip-board, and a standard script?

The second type should be examined in respect of whether or not the proposal could be improved, for example, by a film or other visual aids.

4.3.5 To what extent can existing training facilities be used?

"Existing training facilities", in this sense includes not only library schools and libraries, but also facilities operated by other agencies, particularly government departments. Through using such expertise, costs may be reduced and instructional materials of higher quality may be produced. Association with organizations of established reputation can also help to overcome scepticism.

4.3.6 What will it cost? Will funds be available? Can costs be partially or fully recouped?

Finance may be a key consideration in assessing an objective and the programme implied by the statement of objectives.

While estimates of costs will often be rather crude, some attempt must be made to judge proposals on this basis. Depending upon the nature of the programme, elements that enter into costs may include:

lecturers' fees;
cost of instructional materials;
hire charges for equipment;
hire charges for lecture rooms;
search fees for on-line retrieval;
cost of accommodating participants;
cost of publicity for the programme.

Some of these costs need not be met if the programme is organized by an educational institution for its own faculty and students and, in other cases, some costs may be offset either by obtaining funds from an appropriate agency (or co-operating in the manner suggested in 4.3.5), or by charging participants for attendance.

4.3.7 Can co-operative arrangements be considered?

The possibility of co-operation with the training facilities of other organizations and the sharing of costs has been noted above. Co-operation, however, can take other forms and can be taken further.

For example, if one objective is to produce instructional materials for a target group spread widely over subject fields (such as university students) this might be organized co-operatively in the manner of the SCONUL tape/slide project (33).

Again, co-operation with development agencies may lead to joint use of visiting specialists, and joint staff-training programmes might be organized on a bilateral or multilateral basis.

4.3.8 What time-scale is appropriate?

It is suggested, in 3.6.4 above, that a statement of objectives should include an indication of when, and for how long, a programme to achieve the objective should be mounted.

At this stage it is necessary to review the suggested time-scale, and to ask:

has sufficient "lead-in" time been allowed for preparing materials, publicising the programme, etc.?

is the suggested duration of the programme appropriate to the needs of the target-group, the extent to which support can be expected, and the ability of those responsible to sustain the programme?

is the gap between implementation and follow-up appropriate? Is it long enough for instruction to be assimilated, but short enough for memory of the programme to persist?

4.4 Designing the draft programme

Once all projects suggested in the statement of objectives have been reviewed in the manner suggested above, the committee can prepare a draft programme plan.

In drafting the plan the committee must remember that planning is about the future and it is better to prepare a modest programme for the year ahead (or two years ahead) than to produce a grandiose five-year plan. To prevent over-ambitious planning a "rolling" programme may be considered. That is, a two-year programme is prepared and during year one a new two-year plan is produced which incorporates a review of year two. Thus, each year the lessons that have been learnt can be incorporated into the plan for the year immediately ahead.

In preparing the draft plan a number of points should be taken into account:

4.4.1 Establish priorities

A plan should indicate the priority attached to the achievement of particular objectives.

This will be particularly important if the plan is to be presented to government departments or other agencies in a search for funds or for co-operation.

The basis for priorities should be spelt out in a preamble to a plan.

4.4.2 Establish an appropriate "mix" of programmes

The plan should include a number of deliberately experimental programmes rather than be restricted to "traditional" user-education methods such as the library-orientation course or the lecture series linked to subject disciplines in a university. This could have at least two benefits: (a) it may serve to arouse wider interest and (b) it may reveal how appropriate different programmes are to particular target groups or to the culture generally.

4.4.3 The degree of specificity needed

Although statements of objectives should be quite specific, there is some virtue in varying the level of specificity. This applies in the following circumstances:

plans to be put into effect in year two (or later) may be less specific than those to be implemented earlier. This prevents the plan from becoming too rigid and allows the possibility of change as a result of experience;

plans that are to be implemented nationally, say under the auspices of the national focal point, may need to be spelt out in more detail than those to be implemented locally, where the need may exist for greater flexibility in the light of the state of local resources;

plans that relate to target groups whose information needs are well-defined and generally understood can be more specific than those relating to a user-group with ill-defined needs.

4.4.4 Expanding the planning group by adding special skills

Either at this stage, or after receiving feedback from evaluators, it will be desirable to co-opt individuals with special knowledge and/or skills to advise on the feasibility of a particular programme, or its probable costs, or on its suitability for a target group, or on specialized equipment or techniques (for example, video-recording) that may be needed for implementation.

4.5 Evaluation

4.5.1 Internal evaluation by the planning committee

In order to present a coherent plan, responsibility for its production may have been assigned to a smaller working group or even an individual member and the group as a whole should be given some time to consider the plan individually and in a group evaluation session.

4.5.2 External evaluation by key groups

Although some potential support groups should be represented on the planning committee, or will have provided evaluation of the statement of objectives, it is likely that the drafting process will have drawn attention to other interested parties. It will be important to get their evaluation of the plan.

4.5.3 Programme review in the light of criticism

The draft plan can take its final form when all external comment has been evaluated by the planning committee and when amendments have been made in the light of the most serious criticisms or most constructive counter-proposals.

It is unlikely that, at this stage, there will be much to amend if the committee has engaged in a continuous constructive dialogue with the individuals and organizations most directly involved in the proposed plan.

PART 5

IMPLEMENTATION

5.1 Introduction

The most that any set of guidelines can do is to suggest in very general terms what a national planning agency may need to do in order to implement plans under its own auspices and to encourage the adoption of plans by others.

It will be assumed that the committee, following the submission of the plan, is reconstituted as an "implementation working party" or committee. Reference should be made to 3.1 above, however.

5.2 Factors affecting the implementation of plans

A UNISIST document offers advice on course organization in the form of guidelines (34).

Advice on how different aspects of a plan (or of the proposals within a plan) affect implementation is offered in the following sections.

5.2.1 Delays between the acceptance of plans and their implementation

Although plans concern the future, it will be apparent that any delay between preparation and implementation will affect timeliness and may result in some part of the plans being outdated before they can be put into effect.

The first task of an implementation working group, therefore, should be to review the plans for continued relevance.

5.2.2 The nature of the plans

Plans will embody statements about the intended audience or target group, training techniques, instructional materials, and the means whereby education or training is to be accomplished.

Clearly, which course of action is envisaged will affect the resources that have to be called upon, their costs, the amount of lead-in time required, and the nature of the evaluation. All of these factors must be reviewed by the working group.

5.2.3 The intended audience

Questions include:

is the audience already "information-conscious" or does that consciousness need to be aroused through effective publicity and/or preliminary educational work?

is the audience widely scattered geographically or is it concentrated in a few centres (eg. agricultural research institutes, government departments, etc.)?

what is the ability of the audience (or of the institutions from which it will be drawn) to contribute towards costs?

is the audience to be drawn from a single work area or discipline, or is it multidisciplinary in its spread?

is any particular time of the year more or less appropriate for this audience? and

is the programme aimed at a particular level within a target group, or is it widespread in its audience?

5.2.4 The methods of instruction

How the audience is to be taught will have its principal effects upon:

the knowledge required of the teacher;

the technology to be employed;

the costs of instruction.

5.2.5 The availability of trainers/educators

To implement plans requires access to a "pool" of suitably qualified lecturers, teachers or trainers. These people may exist in library schools, in the national library or national documentation centre, in the major public and academic libraries, or in the information centres/ libraries run by international agencies and bilateral agencies or elsewhere in the community.

5.2.6 The need for "pre-training"

The pre-training of instructors will be necessary:

where a "pool" of suitably experienced individuals does not exist; or

where the instructional methods or the subject areas in which instruction is to take place are unfamiliar.

In such situations the committee will need to plan for training the teachers. This may be done by:

obtaining instructional materials from other countries and organizing self-help seminars;

using those individuals who have some knowledge of user-education to train their colleagues in short courses;

making use of visiting specialists as suggested above;

asking students who are being sent abroad to study to specialize in the user-education field;

seconding potential trainers to study in foreign institutions with a reputation in the user-education field.

5.3 Encouraging the implementation of plans elsewhere

No single agency can accomplish the implementation of a national plan unaided. Indeed, because of the diversity of user-groups and their distribution in society, a plan must envisage the co-operation and participation of a large number of agencies.

An important function of the implementation working party, therefore, will be to encourage others to adopt parts of the plan and to implement specific proposals.

5.3.1 The role of working group members

If the original planning committee was soundly established the members of the working group should be key figures in the profession, capable of working not only in committee but also in the field. There are two possible hazards which the focal agency should strive to avoid:

appointment of prestigious individuals unable to give enough of their time to be effective in the work of publicizing the national plan; and

failure to represent adequately the younger people in the profession who may be expected to have time and enthusiasm.

The role of the working group members should be twofold:

those in a position to do so may implement proposals in their own institutions (possibly as "demonstration projects" as suggested below); and

all members should seek to publicize the national plan by speaking at professional meetings, by writing in professional journals (and, where possible, in journals read by key target groups), and by acting as sources of specialist information to others wishing to implement programmes.

5.3.2 The role of the informal evaluators of the plan

The interest of those selected to review the various stages of the plan (3.8 and 4.5.2 above) should have been aroused by their participation. Every endeavour, should be made to encourage them to publicize the national plan through the implementation of proposals and through publicity activities.

5.3.3 Demonstration projects

The execution of a "demonstration project" involves providing the necessary resources to implement a proposal, monitoring the course of the implementation, evaluating the results, and publicizing the activity as widely as possible.

5.3.4 Training courses

When demonstration projects are successful and where funds allow, it may be desirable to put them on a more permanent basis.

Only certain "demonstrations" can be developed in this way: the travelling workshop is one of these and it may take the form of a course which has been successfully implemented in one institution (or in relation to one target group in a particular region) being exported to other institutions or regions, using the same teaching staff.

Courses implemented in this way may serve to encourage others to develop their own programmes in different subject fields and the organizations involved in giving the courses will acquire valuable expertise.

5.3.5 Training materials

One of the principal ways in which a "multiplier effect" can be encouraged is through the production of effective teaching materials. These may take many forms including standardized lecture notes, tape/slide presentation, video-films and cine-films.

5.3.6 Making available funds or specialists

This is suggested as a spur to co-operative action but there are general applications. The recipients of funds or expertise must be carefully chosen. Clear criteria must be laid down, for example:

a clear need for external funding must be shown;

the project for which the funds are needed must be capable of wider than local application;

evaluation must be built in;

the results of the evaluation and copies of teaching materials must be made freely available to the funding agency for wider dissemination.

5.3.7 Giving advice on seeking external funds

Where a national focal point lacks resources it may assist by giving advice on approaching national agencies and international or bilateral development agencies for support.

Advice of this kind should be given freely and may sometimes take the form of a publication, regularly up-dated, and available on request. It may also be feasible to offer direct assistance in preparing submissions to these organizations and to offer advice on shaping proposals.

5.4 Monitoring procedures

5.4.1 Data collection, an integral part of programme design

Any programme plan should include in the design provision for collecting data on all factors relating to the plan. Without this, thorough evaluation is impossible. Evaluation is concerned with more than outcomes - it is concerned with inputs and with the efficiency and effectiveness of the process. For example, let us assume that the implementation working party is to commission a tape/slide programme on access to medical information: the data-collection process might allow for:

a record of costs of production of the programme, covering raw materials, time, and manpower;

an analysis of the production process showing stages involved with delays indicated and explained;

user-evaluation of the finished product;

estimates of costs of producing further sets; and

estimates of comparative costs of local production.

5.4.2 Survey instruments for user-evaluation

The kind of user-evaluation proposed will depend upon the programme. Thus:

a course-participant may be asked to evaluate a programme or may complete standardized tests;

high-level seminar participants may be interviewed in groups or individually for their reactions;

users of centrally produced teaching materials may be asked to complete a questionnaire on their use of, and reactions to the materials.

Whatever the method, some standardized survey instrument is usually involved. For courses, possible instruments are shown in the guidelines prepared by Lancaster (35). As a general principle, they should be designed with special reference to the programme being implemented and the advice of local specialists in educational research methods should be sought.

5.4.3 Measuring possible effects on library/information system use

The chief aim of most user-education and training programmes will be to change the behaviour of users, to make them either more independent or more efficient users of a system, or to draw their attention to the potentials of a system of which they were previously unaware.

This being so, attention should be given to the kinds of data which would reveal behavioural changes and the means for collecting these data. Typical questions that would need to be asked would include:

is this programme intended to lead to:

increased use of inter-library loan?
increased demand for reservations?
increased demand for advice on information seeking?
increased borrowing in general?

does data exist already on the present state of the system?

what measures are needed to ensure that the data are collected?

in what form, over what period should the data be collected?

how are the data to be analysed and reported and to whom reported?

5.4.4 A data-collection officer for the planning agency?

The complexity and detail of the matters discussed above clearly requires some specialized interest and, where possible, the involvement of specialized manpower. In other words the planning agency needs someone designated "Data collection officer", or "Evaluator" to control the monitoring process. Local library schools may be able to assist in this since the data may be valuable for research.

One possibility would be to establish an "Information officer" in a support agency and to attach the data-collection function to this person.

PART 6

EVALUATION

6.1 Introduction

Evaluation may be a continuous process applicable to all parts of the planning and implementation process. Goldberg identifies it as part of the continuous, cyclical process of evaluation, feedback of information to decision-makers, further decisions as to plans or means of implementation and recycling to collect more data for further evaluation (36).

To derive maximum benefit from evaluation, planners must adopt a self-critical attitude, must be open to suggestion, must be ready to accept the fact that their ideas will not always work out as intended, and that programmes into which considerable effort has been put will sometimes fail. In other words, they must be ready for disappointment, and more than this, they must actively court disappointment, by encouraging or contracting evaluation of their plans and programmes.

In the following sections a limited number of topics are dealt with: guidelines for evaluation are not offered, since this has been done already, for courses workshops and seminars, by Lancaster (37) whose treatment of the subject is sufficiently general to cover programmes of other kinds as well.

6.2 Formal and informal evaluation

It is sometimes assumed that evaluation has not taken place if it has not been formally organized and documented. Whenever groups of people work together, however, the process of group discussion involves individual and group evaluations of information, of issues, of alternatives and these evaluations are often incorporated into plans.

The danger is that this kind of evaluation may be the only kind that is carried out and more formal evaluation may be thought unnecessary. As Stake points out informal evaluation is sometimes "superficial and distorted" (38).

Thus, something more is needed if the planning group is to be guided effectively and if valid information is to enable appropriate decisions to be taken.

6.3 Formative and summative evaluation

Two general types of evaluation can be identified. Usually, when considering evaluation one has in mind the need for data enabling one to decide whether a programme has succeeded in its intentions. One wishes to prove the extent to which the effort expended was worthwhile: one wishes to decide whether to continue with the project or to end it.

This kind of evaluation is called, "summative evaluation" by Scriven (39). In planning, however, what is needed is information which will enable more effective plans to be developed, and to be implemented in a more effective manner. As Stufflebeam puts it:

> "To wait until a programme has been carried through before it is evaluated is not a reasonable decision; in addition to evaluating the results, it is also essential to evaluate the objectives, the programme design, and the process of carrying through the programme design" (40).

The aim of evaluation of this kind is to improve the plan and the programme and Scriven gives it the name "formative" evaluation.

6.4 Contrasting models of evaluation

Most evaluative research has been carried out in the field of education and two distinct models of the research process have been followed which can be characterized as the "'agricultural-botany' paradigm" and the "'social anthropology' paradigm" (41). The former is related to the "Classical", life-sciences research model, with an emphasis on control groups, standardized tests, and statistical treatment of numerical data.

It is now recognized that this model has some serious limitations:

the many relevant variables entering into the educational process must be randomized either through the use of large samples (which is costly) or through the use of controls (which is difficult and ethically dubious);

innovatory programmes must be allowed to change as feedback is received as to their effects: the "before and after" testing strategy of this model may prevent this;

the search for objectively valid data may lead to significant, but subjective information being overlooked;

innovations, by their very novelty, are likely to give rise to atypical or unusual effects: the "scientific" design of evaluation using this model leads to information on these atypical effects being lost;

innovative programmes will mean different things to different interest groups: for example, the national agency's measures of "success" may differ from those of the agency implementing the programme. The use of this model tends to result in those differences being overlooked.

The "social anthropology" model is less easy to characterize, but the name gives some clues. If one thinks of the anthropologist pursuing his study in the field, in daily contact with the subjects of his study, relying upon observation and unstructured, conversational "interviewing" for his data then something similar is involved in evaluation within this model. The emphasis is upon "description and interpretation rather than measurement and prediction" (42). Within this general model Parlett and Hamilton define what they call "illuminative" evaluation, that is, evaluation which seeks to "illuminate" the complex process of evaluation, to "cast some light" on the problems encountered. Three stages are involved in illuminative evaluation:

observation, that is the direct observation of what happens during the course of the programme, or during the use of, say, a new instructional medium;

further inquiry, using interviews, questionnaires and formal testing; and

explanation, drawing upon information provided from the previous stages and from an examination of background studies and relevant formal documentation (for example, statements of goals and objectives).

Illuminative evaluation has been employed in the evaluation of the "travelling workshops" experiment referred to earlier and has been reported upon in a paper by Harris (43).

6.5 The CIPP model and its appropriateness

Reference has been made already to the work of Stufflebeam who evolved what he called the "CIPP model". It is dealt with here since it is clearly related to planning and because it offers a way of visualizing a total process of formative evaluation which is compatible with the "illuminative" approach.

"CIPP" stands for Context, Input, Process and Product, types of evaluation defined as follows:

"1. Context evaluation provides information about needs, problems and opportunities in order to identify objectives.

2. Input evaluation provides information about the strengths and weaknesses of alternative strategies for achieving given objectives.

3. Process evaluation provides information about the strengths and weaknesses of a strategy during implementation so that the strategy or its implementation might be strengthened.

4. Product evaluation provides information for determining whether objectives are being achieved and whether the procedure employed should be continued, modified or terminated. (44).

This model emphasizes and formalizes a basic tenet of the process outlined in these guidelines: that evaluation is required at each stage of the planning and implementation process if plans are to be realistic and if programmes are to be effective.

One modification is necessary, however, the stages described in the CIPP model should not be thought of as relating particularly to stages of the planning model used in these guidelines. In fact, every stage in Figure 1 may be thought of in terms of the CIPP model giving a matrix diagram, a segment of which is shown as

Figure 6 for illustrative purposes. The segment chosen is the stage of goal determination but any of the other stages could have been chosen, with similar results. The opportunity is taken in Figure 6 to show how the methodological techniques of illuminative evaluation might be employed: in fact here three models are interacting.

the planning model defines the problem area (here determination of goals);

the CIPP model suggests the questions to be asked;

the illuminative evaluation model suggests the methods to be used to get information to answer the questions.

6.6 Conclusion

If the planning agency decides to incorporate evaluation into its deliberations in the manner suggested here it should be aware of the cost. Not only in money, but also in time and effort. Is it worth it? This is the crucial question which shows the impossibility of ignoring the issue - since to answer the question involves some cost-benefit evaluation, at least, of a rather crude kind. The questions the planning agency must ask itself are "If we do not evaluate will we be able to say whether we did the right thing, the right way, with the anticipated result?" and "If we can't answer that question will we be able to convince other agencies (perhaps more powerful) that we know what we are doing?"

Figure 6: The CIPP model and illuminative evaluation exemplified

	DETERMINATION OF GOALS	ILLUMINATIVE EVALUATION METHODS
CONTEXT	What needs should the goals seek to satisfy? What problems may arise in satisfying these goals? What opportunities exist that make these goals realistic?	Collection of background information on needs, problems, opportunities. Interviews with key figures. Commissioned surveys.
INPUT	What is the best way to formulate the goals? What alternative goal statements could exist?	Observation of the discussion process. Presentation of alternative strategies and observation of results.
PROCESS	Are we going about things in the most effective way? Could our planning process be strengthened/shortened/ made cheaper/etc.	Observation Interviews with participants.
PRODUCT	Is the statement of goals satisfactory? Does it present a realistic way of satisfying needs?	Interviews with participants Interviews/questionnaires for recipients of the statements.
		↓ Feedback to the planners

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